

The Lexical Derivation of English Middles and Event Argument Suppression

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1. Introduction

The English middle construction, exemplified by (1 a), has a number of idiosyncratic characteristics compared with its active transitive counterpart in (1 b).

- (1) a. Bureaucrats bribe easily.
b. Someone bribed the bureaucrats.

(Keyser and Roeper 1984 : 381)

Syntactically, the logical object of the verb in (1 a) is realized as the grammatical subject, although there is no passive or other morphological marking on the verb that indicates the externalization of the internal argument. The English middle construction is best considered to be derived from the corresponding active transitive sentence, because all middle verbs have their transitive uses even though they may lack their intransitive ones, and no verb exists that can appear only in the middle construction. Semantically, the middle construction describes a general property of the subject, rather than an actual event happening at a given time and place, as observed by Keyser and Roeper (1984), Fagan (1992), and many others.

In this paper I argue, following Fagan (1988), that the middle

formation in English is a presyntactic operation induced by a lexical rule that “genericizes” the Agent argument of a causative verb in order to highlight an inherent property or function of the Theme argument. I further argue, adopting the spirit of Kageyama (2006), that this operation brings about a collateral effect whereby the Event argument of the verb is suppressed. By this suppression, the predicate type shifts from “stage-level” to “individual-level” in the sense of Carlson (1980). My theoretical claim is subtly different from Fagan’s and Kageyama’s, however, in that while they assume that the rule is applied at the level of Argument Structure (AS), I suggest that it directly operates upon the Lexical Conceptual Structure (LCS) of the verb, and that other lexical operations, such as the ergative formation and Patient omission, can be treated under the same mechanism uniformly.

2. Semantic Properties of the Middle Construction

We begin by reviewing the semantics of the middle construction. It is widely accepted in the literature that the most basic semantic property of the middle construction is “genericity.” According to Keyser and Roeper (1984 : 384), middle sentences, “sometimes called *generic sentences*, state propositions that are held to be generally true” and “they do not describe particular events in time.” Fagan (1992) convincingly demonstrates that middle sentences share certain similarities with generic sentences. Indeed, as will be shown, a variety of constraints on the semantic interpretation of middle sentences seems to be reducible to the generic property of this construction.

According to Krifka et al. (1995), the notion of “genericity” can be divided into two distinct phenomena : *kind-referring NPs* and

characterizing sentences. The former refers to “generic NPs” that do not denote particular objects but rather kinds of objects, while the latter refers to “generic sentences” that do not express specific episodes or isolated facts, but instead report a general property that summarizes particular episodes or facts. The two types of genericity are exemplified by (2) and (3), respectively.

- (2) a. The potato was first cultivated in South America.
 b. Potatoes were introduced into Ireland by the end of 17th century. (Krifka et al. 1995 : 2)
- (3) a. John smokes a cigar after dinner.
 b. A potato contains vitamin C, amino acids, protein and thiamine. (Krifka et al. 1995 : 3)

The subjects in (2) designate the kind Potato, rather than a particular potato or groups of potatoes. Sentences in (3) express a habit or a regularity that can be regarded as one of the characterizing features of the subject. Following Matsumoto and Fujita (1995), we argue that the middle construction displays both types of genericity in a single sentence. To avoid terminological confusion, we will refer to the type of genericity that is derived from generic NPs as “NP-genericity,” and the type of genericity that is derived from generic sentences as “S(entential)-genericity.”⁽¹⁾

Fagan (1992) argues that the generic property of the middle construction comes from an implicit Agent of this construction. She points out that the generic interpretation of the sentences in (4) cannot be attributed to their surface subjects, since these subjects refer to unique objects rather than classes of objects.

- (4) a. This dress launders nicely.
 b. My car drives easily. (Fagan 1992 : 150)

Instead, it must be an implicit Agent that provides the generic reading of these sentences. In fact, Fellbaum (1985) illustrates that an implicit Agent in the middle construction can be semantically paraphrased by a generic noun phrase like *people, in general* or *one* as in the following manner.

(5) This car handles smoothly. =

a. People, in general, can handle this car smoothly.

b. One can handle this car smoothly. (Fellbaum 1985 : 22)

Thus, the middle construction involves NP-genericity, which is derived from an implicit Agent of this construction that is interpreted only NP-generically.

On the other hand, the middle construction involves S-genericity in that it never expresses a specific event, but rather describes more or less a permanent property of the subject. Krifka et al. (1995 : 16) argue that “stative sentences express a *property* of the subject referent,” whereas “dynamic sentences report an *event* in which the subject referent is involved.” Although there are some stative sentences that are also episodic (e.g. *Simba is in the cage*), the most important point to note here is that characterizing sentences are always stative. That is, S-genericity is notionally equivalent to “stativity” of the predicate, because stative predicates, if not episodic, do not express a specific event but report a kind of general property of the subject.

According to Krifka et al. (1995), characterizing sentences can be further divided into two subtypes: *habitual sentences* and *lexical characterizing sentences*. The former includes predicates that generalize over events (e.g. (3 a)), whereas the latter includes predicates that generalize over characterizing properties of individuals (e.g. (3 b)). Fagan (1992) argues that, unlike standard generic sentences, middle sentences only have a “capacity” reading, but not a “habitual” reading. This is shown

by the fact that middle sentences are incompatible with a quantificational adverb like *always*, as in (6), which generalizes over events that have actually taken place.

(6) ?This book always reads easily. (Fagan 1992 : 154)

Therefore, middle sentences are lexical characterizing sentences that do not generalize over events. The reason why middle sentences lack a habitual reading may be attributed to the fact that while all habitual predicates are morphologically related to episodic predicates (*John smokes* has a episodic counterpart *John is smoking*), middle verbs as well as individual-level stative verbs are *lexically* stative (*John knows French* has no such episodic counterpart), and consequently they cannot express a statement that is premised on the existence of any actual events (cf. Krifka et al. 1995 : 17).

The lexical S-genericity of the middle construction provides direct evidence that middle sentences are individual-level predications. Matsumoto and Fujita (1995) explicitly identify the middle construction as an individual-level predication based on the following tests, where middle verbs in (a)-sentences exhibit an identical behavior to individual-level stative predicates in (b)-sentences. First, middle verbs are incompatible with punctual time adverbials.

- (7) a. ?*Yesterday, the mayor bribed easily.
b. ??Yesterday evening John knew the answer.

(Roberts 1987 : 194–7)

Second, middle verbs are incompatible with the progressive aspect.

- (8) a. *Bureaucrats are bribing easily.
b. *John is knowing the answer. (Keyser and Roeper 1984 : 385)

Third, middle verbs cannot occur in the complement of direct perception verbs.

(9) a. *I saw bureaucrats bribe easily.

b. *I saw Mary 5'4" in height. (Keyser and Roeper 1984 : 386)

Fourth, middle verbs cannot appear in the existential construction.

(10) a. *There are nasturtiums transplanting well.

b. *There are chili peppers spicy.

(Matsumoto and Fujita 1995 : 101)

These examples can be ascribed to the fact that, like individual-level stative predicates, middle verbs are not eventive or episodic any longer but stative to depict a characteristic property of the subject that holds independent of a particular duration of time.

In short, the middle construction displays both NP-genericity and S-genericity. The NP-genericity of the construction comes from an implicit Agent that is interpreted NP-generically, while the S-genericity comes from the lexical stativity of middle verbs, which naturally leads to the fact that middle sentences are individual-level predications. In what follows, we propose particular lexical operations that account for these semantic properties of the middle construction.

3. The Lexical Derivation of the Middle Construction

3. 1. Verbs in the Middle Construction

In this subsection, we focus on verb classes in the middle construction. It is obvious that the middle formation is possible within a limited range of verbs. Not all transitive verbs are equally grammatical in the middle construction. Hence, before proposing a specific lexical operation, we need to elucidate what types of verbs can participate in the middle formation, by drawing on the LCS schemas developed by Kageyama (1996).

There are several previous works that aim to delimit the verb classes

that can appear in the middle construction. Among others, Roberts (1987) claims that the so-called “Affectedness Constraint” may be a lexical condition for the English middle formation (see also Fagan 1992). This constraint, originally proposed as a general condition for the formation of passive nominals involving a preposing of the Theme argument (e.g. *Rome’s destruction by the barbarians*), states that “if a complement of X is unaffected, it is impossible to eliminate the external θ -role of X” (Jaeggli 1986 : 607). In the case of the middle formation, the “affected” argument is allegedly evaluated as the Theme argument that undergoes a “change-of-state” (Roberts 1987 : 210), since verbs of change of state typically appear in the middle construction, as shown in (11).

- (11) a. Crystal vases break easily. (Levin 1993 : 241)
- b. Copper rods bend easily. (Levin 1993 : 242)
- c. Idaho Potatoes bake beautifully. (Levin 1993 : 244)
- d. Cotton clothes dry easily. (Levin 1993 : 245)

In contrast, verbs that have no “affected” Theme argument cannot participate in the middle formation. For example, verbs of psychological activity as in (12) or verbs of direct perception as in (13) cannot appear in the middle construction.

- (12) *French acquires easily. (Keyser and Roeper 1984 : 383)
- (13) *The mountains see easily. (Roberts 1987 : 193)

Moreover, verbs of surface contact as in (14) can appear in the middle construction only when a change of state in the Theme argument is specified by a resultative predicate.

- (14) a. This kind of metal hammers *(*smooth*) fast.
- b. This counter wipes *(*dry*) quickly. (Rapoport 1993 : 175)

Hence, we can tentatively conclude that the middle formation is available only with verbs that have the LCS of change of state as in (15 a), but not

other types of LCS as in (15 b–d).⁽²⁾

- (15) a. [[**x** ACT (ON-**y**)] CAUSE [**y** BECOME [**y** BE AT-**z**]]] (cf. (11))
- b. [**y** BECOME [**y** BE AT-**z**]] (cf. (12))
- c. [**y** BE AT-**z**] (cf. (13))
- d. [**x** ACT (ON-**y**)] (cf. (14))

By adopting the system of LCS, we can precisely identify the range of verbs that can appear in the middle construction.

The LCS approach adopted here correctly predicts that other classes of verbs than verbs of change of state can participate in the middle formation as long as they have the LCSs that are comparable to (15 a). In fact, the verbs in (16) are perfectly acceptable in the middle construction, even though they are conventionally not categorized as verbs of change of state (cf. Levin 1993).

- (16) a. This family's house wooden toy *assembles* easily without tools.
- b. Many models *photograph* well and look horrible in person.
- c. For the most part, the novel *reads* easily.
- d. The Ferrari *drives* fast with great handling and comfort.

(a, b, c, d from Internet)

This is because these verbs, like verbs of change of state, represent a specific causative process of the change of state/location in the Theme argument. For example, *assemble* in (16 a) and *photograph* in (16 b) represent a specific change of state in the Theme, thanks to their “shadow arguments” (Pustejovsky 1995 : 63), such as a material (e.g. parts (of the toy)) or a product (e.g. pictures (of models)). In (16 c), *read* represents a metaphoric change of location in what is in the novel, since the purpose of reading a book must be to acquire information from it. That is, “readability” in this case does not refer to casual attitude of a reading, or big and sharp letters, etc., but rather to how easily the reader can

understand the content of the book. In (16 d), *drive*, by definition, represents a continuous caused motion of the vehicle. Since a change of location is equivalent to a change of state in the notation of LCS (Kageyama 1996 : 66), these verbs can also be considered to be verbs of change of state in a broad sense. Their LCSs will be as follows.

- (17) a. assemble : [[**x** ACT ON-**parts**] CAUSE [**parts** BECOME [**parts** BE AT-**the toy**]]]
 b. photograph : [[**x** ACT ON-**models**] CAUSE [**models** BECOME [**models** BE AT-IN-**pictures**]]]
 c. read : [[**x** ACT ON-**the novel**] CAUSE [**information** BECOME [**information** BE AT-**x**]]]
 d. drive : [[**x** ACT ON-**Ferrari**] CAUSE [**Ferrari** MOVE]]

These verbs all represent particular causative processes, and therefore must satisfy the Affectedness Constraint in each different way.

To summarize, the English middle formation is limited only to verbs that lexically entail a causative process that represents a change of state/location in the Theme. As mentioned in the previous section, since the middle construction is an expression to describe an inherent property of the Theme argument, some sort of change of state/location that can be considered to be a function of the Theme must be logically entailed by the verb. Intuitively, only verbs that have “high semantic transitivity” in the sense of Hopper and Thompson (1980) are eligible as middle verbs. This must have something to do with the fact that all middle verbs have their transitive counterparts. Based on these considerations, we employ in what follows the LCS of a causative verb as in (15 a) as a target LCS of the lexical rule that induces the middle formation.

3. 2. Middle Rule

As discussed in section 2, the middle construction denotes a different semantic concept in terms of “genericity” from its corresponding active sentence. It would appear that this is motivated by the speaker’s subjective event construal that will be reflected in actual linguistic expressions in principled ways (cf. Langacker 1991 : 335). Specifically, the pragmatic motivation to use the middle construction is to describe an inherent property or function of the Theme argument, regardless of ability and/or volition of a possible Agent. Hence, what we need is an operation that defocuses the Agent to be understood as an implicit argument, so that a potential change of state/location in the Theme argument is highlighted. I suggest, following Fagan (1988), that this defocusing of the Agent argument can be achieved by changing a specific or definite Agent into some arbitrary referent paraphrased by such a generic noun phrase as *people, in general, one*, and the like (cf. (5)).

Fagan (1988) argues that the lexical rule in (18) shall be responsible for the generic interpretation of an implicit Agent of the middle construction.

(18) “Assign *arb* to the external θ -role.” (Fagan 1988 : 198)

The term *arb* in (18), originally introduced by Rizzi (1986), designates a set of features, [+human, +generic, \pm plural], which identifies the semantic properties generally referred to as “arbitrary interpretation” (Rizzi 1986 : 509). According to Fagan, this rule assigns arbitrary interpretation to the external thematic argument (i.e. Agent), by which the Agent argument should be interpreted generically. We would like to propose that the rule like (18) will be applied at the LCS of a causative verb as in the following manner.

(19) Active : [[**x** ACT] CAUSE [**y** BECOME [**y** BE AT-**z**]]

↓ Middle Rule

Middle : [[**arb** ACT] CAUSE [**y** BECOME [**y** BE AT-**z**]]

This process represents the idea that an implicit Agent of the middle construction is interpreted generically. Given that NP-genericity of a sentence can be ascribed solely to a generic thematic argument in the sentence that is expressed either overtly or covertly, the NP-genericity of the middle construction must be directly derived from the generic interpretation of an implicit Agent provided by the rule like (18).

Following Rizzi (1986), Fagan (1988) argues that the thematic argument that is assigned *arb* in the lexicon is lexically “saturated,” and it remains syntactically “inert” in the sense that it will never be projected into the syntax. However, Stroik (1992) provides a strong piece of evidence that an implicit Agent of the middle construction should be present syntactically.

(20) a. Books about {oneself/*herself} never read poorly.

b. Books about {*oneself/herself} read quickly for Mary.

(Stroik 1992 : 136)

The proper license of the reflexive pronoun *oneself* in (20 a) suggests that some null argument serves as a possible antecedent of the pronoun. The null argument in question must be an implicit Agent, because the pronoun needs to be co-indexed with the overt *for*-phrase argument, as shown in (20 b), which in turn must logically link to the implicit Agent implied in this construction. Given this, I suggest that an implicit Agent of the middle construction can be realized syntactically, and that it may be an instance of the so-called “arbitrary pro” (henceforth, *pro_{arb}*), which is an empty counterpart of arbitrary thematic arguments (cf. Rizzi 1986).⁽³⁾ On the common assumption that arguments in the syntactic structure are

projected from the AS of predicates, I propose that the AS of middle verbs will be as follows.

(21) $\langle \text{Agent}_{arb} \langle \text{Theme} \rangle \rangle$

The term *Agent_{arb}* in (21) is a designation of an arbitrary external thematic argument, which is mapped from the LCS in (19). We assume that this arbitrary argument will be projected into the syntax as *pro_{arb}* (e.g. in [Spec-VP], under the predicate-internal subject hypothesis). Given that *pro_{arb}* is incapable of being the grammatical subject in English, where the EPP requires that [Spec-IP] must be filled by an overt element, the Theme argument will be realized as the grammatical subject to satisfy the EPP instead. This satisfactorily accounts for the surface syntactic form of the middle construction.⁽⁴⁾

To sum up, the middle formation is induced by a lexical rule, which is applied at the level of LCS, to change a specific or definite Agent into some arbitrary referent that is interpreted NP-generically. The NP-generic property of the middle construction is derived from this lexical operation directly. However, the S-genericity of the middle construction can never be derived from the arbitrary interpretation of the implicit Agent, since not all characterizing sentences involve a generic NP. Therefore, we need another mechanism to account for the S-genericity of the construction. In the next section, we turn to this issue and show a further effect of Middle Rule in terms of Event argument suppression.

4. Event Argument Suppression

In the previous section, we have seen that Middle Rule assigns arbitrary interpretation to the Agent argument of an active causative verb, which accounts for the NP-genericity of the middle construction. As discussed in

section 2, however, the middle construction also displays S-genericity in that it never expresses a specific event, but rather describes a general property of the subject. In fact, the lexical S-genericity of middle verbs offers a diagnosis of the contention that middle sentences are truly individual-level predications.

Kratzer (1995) argues that the stage-level/individual-level distinction follows from whether a predicate has the so-called “Davidsonian” Event argument (Davidson 1967 ; henceforth, E-argument) in the AS. That is, while stage-level predicates have an E-argument in the AS, individual-level predicates do not. When we disregard, for now, stage-level stative predicates (e.g. *Simba is in the cage*), where stative predicates denote a situation that occurs during a given period of time, we can translate the notion of “stage-level” and “individual-level” into “eventive” and “stative,” respectively. Hence, a predicate is only eventive if it has an E-argument, but stative if it has no E-argument. Conversely, stage-level stative predicates must have an E-argument, and thus must be eventive, even if they are apparently stative predicates. Furthermore, I tentatively suggest that habitual predicates (e.g. *John smokes*) may be lexically eventive, but stative in interpretation by the agency of “generalization operator” that changes an eventive or episodic predication into a characterizing one (cf. Krifka et al. 1995 : 20). In short, the crucial point for the present discussion is that only *lexically* stative predicates can hold S-genericity of the sentence that excludes a habitual reading.

According to Kageyama (2006), arguments that indicate eventivity or stativity of the predicate are hypothetically labeled at the outermost (highest) Event node in each LCS substructure, as illustrated in (22), where all LCS structures except individual-level State contain at least one Event node, and thus an E-argument associated with it.

- (22) a. Activity : [_{EVENT} **x** ACT (ON-**y**)]
 b. Achievement : [_{EVENT} **y** BECOME [_{STATE} **y** BE AT-**z**]]
 c. Accomplishment : [_{EVENT} [_{EVENT} **x** ACT (ON-**y**)] CAUSE [_{EVENT} **y**
 BECOME [_{STATE} **y** BE AT-**z**]]]
 d. stage-level State : [_{EVENT} **y** BE AT-**z**]
 e. individual-level State : [_{STATE} **y** BE AT-**z**]

Following Kageyama (2006), we assume that the outermost Event node in the LCS is responsible for mapping of an E-argument from LCS to AS, and that stativity is not indicated by State argument itself, but by absence of an E-argument that can be mapped from LCS to AS. Specifically, if a LCS has an E-argument in the outermost Event node, it will be mapped onto the AS, and then the predicate turns out to be eventive, while if a LCS lacks an E-argument in the outermost Event node, no E-argument will be mapped onto the AS, and then the predicate turns out to be stative.

The middle construction is an individual-level predication, and thus must be stative, although the corresponding active sentence is eventive. This means that the eventivity of the original active sentence will be lost in the course of the middle formation. I suggest that this happens because Middle Rule secondarily affects an E-argument in the LCS to suppress it to become “inactive” in the sense that it will never be mapped onto the AS. In section 3. 1., we revealed that verbs in the middle construction consist of two distinct subevents, each of which is connected with the other by a CAUSE function, as in (22 c). Since, in our system, the outermost E-argument is the target of mapping from LCS to AS, it is contemplated that Middle Rule will lead to inactivate the outermost E-argument in such a “collateral” way as is suggested by Kageyama (2006).

The motivation of E-argument suppression must have something to do

with the genericization of a possible Agent by Middle Rule. Since an E-argument is necessary for specification of an event (Davidson 1967), if a participant in the event and/or a particular setting (e.g. time, place) of the event are abstracted away, the concreteness of the event itself will be “blurred” in parallel (Kageyama 2006 : 108). This consideration allows us to postulate that the E-argument in the super-event of middle verbs may be inactivated by the genericization of the Agent argument of the verb, given that an Agent is the “head” argument of the super-event in the sense that it plays the most significant role in that particular subevent. Furthermore, I suggest that the inactivation of the E-argument in the super-event will lead to inactivate the outermost E-argument in the LCS, since the event structure as a whole can be identified as eventive only if each constituent subevent remains eventive.

All the process can be illustrated schematically in (23) (a single-lined strike-through indicates an inactivated E-argument).

(23) LCS_1 : [EVENT [EVENT **x** ACT] CAUSE [EVENT **y** BECOME [STATE **y** BE AT-**z**]]]

↓ Middle Rule

LCS_2 : [EVENT [EVENT **arb** ACT] CAUSE [EVENT **y** BECOME [STATE **y** BE AT-**z**]]]

↓ Collateral Effect 1

LCS_3 : [EVENT [EVENT **arb** ACT] CAUSE [EVENT **y** BECOME [STATE **y** BE AT-**z**]]]

↓ Collateral Effect 2

LCS_4 : [EVENT [EVENT **arb** ACT] CAUSE [EVENT **y** BECOME [STATE **y** BE AT-**z**]]]

↓

↓

AS : <Agent_{arb} <Theme>>

The E-argument in the super-event of LCS_2 is inactivated by the first collateral effect of Middle Rule. The inactivated E-argument in the super-event then leads to inactivate the outermost E-argument. This is the second collateral effect of the rule. As a result, the inactivated outermost

E-argument is suppressed not to be mapped onto the AS, and consequently the lexical S-generic property of middle verbs derives.

The same mechanism can apply to other lexical operations that induce some sort of thematic argument suppression in the LCS. For illustrative purposes, we first consider the ergative formation, exemplified by (24).

(24) a. The sun melted the ice.

b. The ice melted.

(Keyser & Roeper 1984 : 381)

As with middle verbs, ergative verbs are also limited to verbs that entail a causative process involving a change of state/location in the Theme argument (cf. Levin 1993). Keyser and Roeper (1984) argue that, unlike middle verbs, ergative verbs do not involve an understood Agent. Instead, in the ergative formation, the external aid for a change in the Theme is completely deleted from the conceptual structure of the verb. This is shown by the fact that, unlike middle verbs, ergative verbs can be modified by an expression like *all by oneself*, as shown in (25), which is only compatible with Agentless clauses.

(25) a. The boat sank all by itself.

b. *Bureaucrats bribe easily all by themselves.

(Keyser & Roeper 1984 : 405)

This contrast indicates that whereas middle verbs retain an implicit Agent who engages in the action, ergative verbs involve no such Agentive force at all. To account for this semantic property, Fagan (1988) proposes the lexical rule in (26) for the ergative formation.

(26) "Delete the external θ -role."

(Fagan 1988 : 199)

When ignoring the irrelevant detail, many researchers (e.g. Levin and Rappaport Hovav 1995, Kageyama 1996) agree that the rule for ergative formation is applied at the level of LCS. Given that an Agent is the "head"

argument of the super-event, I suppose that the deletion of the Agent by the rule like (26), by hypothesis, will end up deleting the entire super-event completely, so that only the arguments in the remaining sub-event will be mapped onto the AS, giving rise to at least syntactically an unaccusative verb. Furthermore, I suggest that this rule may also delete the E-argument in the super-event at the same time as the deletion of the Agent. In this case, the outermost E-argument will not be inactivated, since the deleted super-event no longer has any influence on the semantic interpretation of the verb, and the remaining sub-event still holds an intact E-argument. As a result, the outermost E-argument of the verb will be mapped onto the AS along with the internal thematic argument (i.e. Theme). The process of the ergative formation can be illustrated as in (27) (\emptyset indicates a deleted thematic argument, and a double-lined strike-through indicates a deleted E-argument).

(27) LCS_1 : [EVENT [EVENT **x** ACT] CAUSE [EVENT **y** BECOME [STATE **y** BE AT-**z**]]]

↓ ↓ Ergative Rule

LCS_2 : [EVENT [~~EVENT~~ \emptyset ACT] CAUSE [EVENT **y** BECOME [STATE **y** BE AT-**z**]]]

↓

↓

AS : <Event

<Theme>>

This formulation shows that ergative verbs have an E-argument in the AS. Accordingly, the ergative construction exhibits the characteristics of stage-level predications.

(28) a. The boat sank, according to the newspaper.

b. The boat is sinking. (Keyser & Roeper 1984 : 385)

In (28), the ergative verb, as contrasted with middle verbs, can report a specific event in the preterit tense and in the progressive aspect.

Finally, we take up the omission of the grammatical objects of causative verbs. The case is exemplified by the sentences in (29).

- (29) a. Tigers only kill at night. (Goldberg 2001 : 506)
b. That dog bites. (Levin 1993 : 39)

causative LCS, we can surmise that the same effect as the middle formation is also at work in this case. That is, we may expect that the E-argument of the sub-event in LCS_2 will be collaterally inactivated by the genericization of a possible Theme. Furthermore, it must subsequently inactivate the outermost E-argument to be suppressed. As a result, no E-argument will be mapped onto the AS, and the predicate involves the lexical S-genericity in the same manner as the middle construction. In fact, the sentence of Patient omission exhibits all the characteristics of individual-level stative predications, as shown in (32).

- (32) a. *The tiger killed at that moment.
 b. *The tiger is killing (now).
 c. *I saw the tiger kill there. (Kageyama 2006 : 104)

These examples explicitly indicate that the Patient omission results in the suppression of the outermost E-argument of the verb in the same way as the middle formation.

One might assume that E-argument suppression may take place in the syntactic structure. Some researchers (e.g. Keyser and Roeper 1984, Roberts 1987, Stroik 1992) propose a purely syntactic derivation of the middle construction. However, as far as English is concerned, there seems to be no chance for them, because a syntactic operation (e.g. passive) will not induce such a systematic suppression of E-arguments as in the case of the middle formation. The *lexical* S-generic property of the middle construction can never be derived without a *lexical* operation. What is necessary to shift the predicate type is just a presyntactic operation as thus far described.

To summarize, we have reached the following table concerning the relationship between the predicate type of a causative verb and E-arguments in the LCS substructures.

Voice	Event argument in super-event	Event argument in sub-event	Predicate Type
Active	active	active	Eventive
Middle	inactive	active	Stative
Ergative	deleted	active	Eventive
Patient Omission	active	inactive	Stative
Passive	active	active	Eventive

We can generalize, at the risk of oversimplification, that a predicate is interpreted as eventive only if all constituent E-arguments in the LCS substructures remain “active.” These data can be dealt with by assuming that genericization of a thematic argument by a certain lexical rule will collaterally suppress an E-argument in the LCS in the manner described above.

5. Conclusion

In this paper, I have argued that the English middle formation is a presyntactic operation induced by Middle Rule, which genericizes the Agent argument of a causative verb into some arbitrary reference at the level of LCS. The NP-generic property of an implicit Agent is directly derived from this lexical operation. I have further argued that the genericization of the Agent argument will collaterally lead to inactivate the outermost E-argument in the LCS. Consequently, no E-argument will be mapped onto the AS, and therefore the lexical S-generic property of middle verbs results. This mechanism can apply to other lexical operations such as the ergative formation and Patient omission in a uniform way, and has a potential to produce further empirical support in

the linguistic field.

Notes

- (1) Matsumoto and Fujita (1995) use the terms “D-genericity” and “I-genericity” for the two types of genericity discussed here. The idea was that the former is often manifested by definite NPs whereas the latter by indefinite (or bare plural) NPs. However, there is no actual correspondence between the types of genericity and the types of NPs, and therefore we do not use these terms in this paper (see Krifka et al. 1995 : 4, fn. 3).
- (2) Obviously, the Affectedness Constraint is merely a necessary condition for the middle formation. Not all change-of-state verbs can appear in the middle construction. Further discussion on this topic is quite beyond the present paper. Some important proposals have been made in terms of the characteristic property of the subjects of middle sentences, such as “responsibility” (Van Oosten 1986) or “Telic role” (Kageyama 2005).
- (3) When an Agent is overtly indicated by the *for*-phrase adjunct, the generic interpretation of the implicit Agent may be cancelled. I suggest that this is due to the reinterpretation of the Agent at LF. That is, as shown by (20 b), the generic Agent can be co-indexed with the *for*-phrase argument in the syntax, and thereby overwritten with the interpretation of the specific *for*-phrase argument at LF. This constitutes another evidence to support that the implicit Agent of the middle construction is syntactically present.
- (4) We knowingly ignore the question as to the base-generated position of the Theme argument of the middle construction. Diesing (1992) argues that the subjects of individual-level predicates are all base-generated in [Spec-IP]. Matsumoto and Fujita (1995) claim under the minimalist framework that the Theme argument of the middle construction is once base-generated in the object position (i.e. a complement of the verb) and moves from thence to the surface subject position (i.e. [Spec-AgrSP]). At present, we are not in a position to discuss which scenario is the most likely.

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